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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/509,781

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EXAMINER

SINES, BRIAN J

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/509,781	Applicant(s) LOWE ET AL.	
	Examiner Brian J. Sines	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 April 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to the present claims have been considered but are moot in view of the new ground(s) of rejection.

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Drawings

The drawings were received on 4/24/2007. These drawings are acceptable.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11 – 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claims 11 – 19 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: Regarding claim 11, this claim is directed to a method of detecting an analyte. However, the claimed method is incomplete in that it does not positively recite a detection step. For example, is the physical property variation correlated with the amount of, or presence of, the detected analyte that is contained in the sample suspected of containing the analyte? Furthermore, this claim recites that the pore-forming agent is not present in the sensor. It is unclear when or how the pore-forming agent is removed. The claim does not positively recite any wash, dissolution or extraction step for the pore-forming agent after the medium is formed.

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 11 – 13, 15, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blyth et al. (U.S. Pat. No. 6,689,316) in view of Catania et al. (U.S. Pat. No. 6,461,873).

Regarding claims 11 and 12, Blyth teaches a method of detecting an analyte using a sensor comprising a holographic element comprising a medium comprising a porous polymer film matrix having a defined pore volume and a hologram disposed throughout the volume of the medium (see, e.g., col. 2, line 56 – col. 3, line 35). Blyth teaches that the medium can exhibit a variation in a physical property, such as a measurable volume or size change, induced by swelling upon contacting the sensor medium with a target analyte, such as ethanol (see, e.g., col. 6, lines 14 – 65 and Example 2).

However, Blyth does not specifically teach a specific medium forming method for making the porous polymer matrix using a pore-forming agent.

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The Applicant is advised that the Supreme Court recently clarified that a claim can be proved obvious merely by showing that the combination of known elements was obvious to try.

In this regard, the Supreme Court explained that, “[w]hen there is a design need or market

pressure to solve a problem and there are a finite number of identified, predictable solutions, a

5 person of ordinary skill in the art has a good reason to pursue the known options within his or her technical grasp.” An obviousness determination is not the result of a rigid formula disassociated

from the consideration of the facts of the case. Indeed, the common sense of those skilled in the

art demonstrates why some combinations would have been obvious where others would not. The

combination of familiar elements is likely to be obvious when it does no more than yield

10 predictable results. See *KSR Int’l v. Teleflex Inc.*, 127 Sup. Ct. 1727, 1742, 82 USPQ2d 1385, 1397 (2007) (see MPEP § 2143).

In that regard, Blyth does teach that the medium comprising the polymer matrix is

porous and has a defined pore volume specific for a specific analyte to be detected (see, e.g., col.

3, lines 7 – 17).

15 Catania et al. further teaches the use of a porogen or pore-forming agent in making a

porous sensing polymer (see, e.g., col. 5, lines 14 – 42). The presence of the pores in the

disclosed polymer material increase the surface area of adsorption for the detected analyte, i.e.,

caffeine molecules, thereby increasing the capacity of analyte adsorption and therefore

increasing the sensitivity of the detector. Consequently, as indicated by Catania, a person of

20 ordinary skill in the art would accordingly have recognized the suitability and predictable result of incorporating the use of a pore-forming agent in forming an effective sensing medium

comprising a porous polymer matrix. Therefore, it would have been obvious to a person of

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ordinary skill in the art to incorporate the use of a pore-forming agent as claimed in forming the porous medium for detecting the analyte.

Regarding claim 13, Blyth teaches that the optical characteristic monitored can be reflectance (see, e.g., col. 3, lines 29 – 35; col. 5, lines 24 – 36).

5 Regarding claim 15, Catania teaches the use of a pore-forming agent comprising toluene, which is a liquid at standard room temperature and atmospheric pressure (see, e.g., col. 5, lines 14 – 42).

 Regarding claims 18 and 19, Blyth teaches the incorporation of hydroxyethyl methacrylate polymer as a holographic medium material (see, e.g., Example 2, col. 9, lines 29 –
10 52).

2. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Blyth et al. and Catania et al., and further in view of Mork et al. (U.S. Pat. No. 6,239,224).

 Regarding claim 14, as indicated by Mork et al., a porogen or pore-forming agent comprising either gas or gas-generating agents (see, e.g., col. 10, lines 24 – 31). Consequently,
15 as shown by Mork et al., the use of these recited pore-forming agents would have been recognized as being suitable and predictable pore-forming agents for forming porous polymer matrix materials. The combination of familiar elements is likely to be obvious when it does no more than yield predictable results. Furthermore, the simple substitution of one known element for another is likely to be obvious when predictable results are achieved. See *KSR Int'l v.*
20 *Teleflex Inc.*, 127 Sup. Ct. 1727, 1742, 82 USPQ2d 1385, 1397 (2007) (see MPEP § 2143). In addition, the Courts have held that the selection of a known material, which is based upon its suitability for the intended use, is within the ambit of one of ordinary skill in the art. See *In re*

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Leshin, 125 USPQ 416 (CCPA 1960) (see MPEP § 2144.07). Therefore, it would have been obvious to a person of ordinary skill in the art to incorporate the use of a pore-forming agent comprising either water or solids as claimed in forming the porous medium.

3. Claims 15 – 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blyth et al. and Catania et al., and further in view of O’Gara (U.S. Pat. No. 6,528,167).

Regarding claims 16 and 17, as indicated by O’Gara, porogens or pore-forming agents comprising either liquid water or solids, such as a calcium carbonate or silica, obtainable by extraction or dissolution after polymer formation are well known in the art (see, e.g., col. 6, lines 4 – 23). Consequently, as shown by O’Gara, the use of these recited pore-forming agents would have been recognized as being suitable and predictable pore-forming agents for forming porous polymer matrix materials. The combination of familiar elements is likely to be obvious when it does no more than yield predictable results. Furthermore, the simple substitution of one known element for another is likely to be obvious when predictable results are achieved. See *KSR Int’l v. Teleflex Inc.*, 127 Sup. Ct. 1727, 1742, 82 USPQ2d 1385, 1397 (2007) (see MPEP § 2143). In addition, the Courts have held that the selection of a known material, which is based upon its suitability for the intended use, is within the ambit of one of ordinary skill in the art. See *In re Leshin*, 125 USPQ 416 (CCPA 1960) (see MPEP § 2144.07). Therefore, it would have been obvious to a person of ordinary skill in the art to incorporate the use of a pore-forming agent comprising either water or solids as claimed in forming the porous medium.

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Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

5 A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37
10 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian J. Sines whose telephone number is (571) 272-1263. The
15 examiner can normally be reached on Monday - Friday (11 AM - 8 PM EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Brian J. Sines
Primary Examiner
Art Unit 1797

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/Brian J. Sines/
Primary Examiner, Art Unit 1797

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